

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-38 (Canceled).

39. (Currently Amended) A method for producing a semiconductor device comprising:

a first step of forming an a first electrically insulating layer on a wafer ~~with a part of~~ containing a circuit electrode, ~~provided on said wafer, remaining exposed from said first electrically insulating layer covering a periphery portion of said circuit electrode;~~ by printing an electrically insulating material including particles therein by use of a mask, said electrically insulating layer having an inclined portion at an edge thereof and functioning to relax occurrence of stress between said semiconductor device and a circuit board on which the semiconductor device is to be mounted;

a second step of forming a wiring over an area from said circuit ~~electrode of said~~ second electrically insulating layer, having an inclined portion and a flat portion of, ~~on said first electrically insulating layer; and layer, said second electrically insulating layer having a function to relax a stress between said semiconductor device and a circuit board on which said semiconductor device is to be mounted,~~

wherein said second electrically insulating layer is formed by printing an electrically insulating material including particles on said first electrically insulating

layer with a mask;

a third step of forming a wiring on said inclined portion and said flat portion of said second electrically insulating layer, a portion of said wiring on said inclined portion being electrically connected to a portion of said wiring on said flat portion;
and

a ~~third~~ fourth step of forming an external connection terminal on said second electrically insulating layer, said external connection terminal being electrically connected with said circuit electrode through said wiring.

40. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, said electrically insulating ~~layer on a wafer is formed by printing~~ material is a paste-like polyimide material.

41. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein said particles are made of same material as said electrically insulating material ~~which forms the electrically insulating layer.~~

42. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, said particles are diffused in said electrically insulating material so that the forming of said second electrically insulating layer is controlled.

43. (Previously Presented) A method for producing a semiconductor device according to claim 39,

wherein said particles have a diameter of less than 10 micrometers each.

44. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein said ~~first~~ second step further comprises a step of forming a protrusive portion in a vicinity of a boundary between the inclined portion of said electrically insulating layer and a flat portion of said electrically insulating layer having an approximately uniform thickness, said protrusive portion ~~being disposed over a part~~ extending further away from a principal surface of said wafer than that of said flat portion.

45. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, said electrically insulating layer is formed with a thickness in a range of from 35 to 150 micrometers.

Claim 46 (Canceled)

47. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, said second electrically insulating layer is formed with an inclined portion thereof at a gradient in a range of from 5% to 30% with respect to a principal surface of said ~~semiconductor device~~ wafer on which said

circuit electrode is provided.

48. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, ~~said electrically insulating layer is formed by use of said~~ second electrically insulating material, and wherein used in the formation of said second electrically insulating layer, has a glass transition temperature ~~of said electrically insulating material is~~ in a range of from 150°C to 400°C.

49. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, ~~said electrically insulating layer is formed by use of said electrically insulating material, and wherein used in the formation of said second electrically insulating layer, has~~ a heat degradation temperature ~~of said electrically insulating material is~~ in a range of from 300°C to 450°C.

50. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, a squeegee is moved ~~over an opposite vertex~~ along a diagonal direction of an opening portion in said mask ~~so that in the formation of said second electrically insulating layer is formed~~ by printing.

51. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in the ~~first~~ second step, said mask and said wafer are aligned with

each other, a squeegee is moved on said mask to fill resin into an opening portion of a mask pattern and, thereafter, said mask is detached from said wafer so that said electrically insulating layer is formed.

52. (Currently Amended) A method for producing a semiconductor device according to claim 39,

wherein, in said ~~first~~ second step, said second electrically insulating layer is formed by printing by use of said mask having an opening portion smaller than a region covered by said second electrically insulating layer, the opening portion being filled with the component material of said second electrically insulating layer that becomes over spread after removal of said mask.

53. (Currently Amended) A method for producing a semiconductor device comprising:

a first step of forming an a first electrically insulating layer on a wafer ~~with a part of containing~~ a circuit electrode, ~~provided on said wafer, remaining exposed from said first electrically insulating layer covering a periphery portion of said circuit electrode;~~ by printing an electrically insulating material including particles therein by use of a mask, said electrically insulating layer having an inclined portion at an edge thereof and having a thickness in a range of from 35 to 150 micrometers;

a second step of forming a wiring ~~over an area from said circuit electrode of the wafer to said~~ second electrically insulating layer having an inclined portion at an edge thereof and a flat portion of on said first electrically insulating layer; and layer,

wherein, said second electrically insulating layer has a thickness in a range of from 35 to 150 micrometers;

a third step of forming a wiring over an area extending from said circuit electrode of said wafer to the inclined portion and the flat portion of said second electrically insulating layer; and

a ~~third~~ fourth step of forming an external connection terminal on said second electrically insulating layer, said external connection terminal being electrically connected with said circuit electrode through said wiring.

54. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said second electrically insulating layer is formed by printing a paste-like polyimide material.

55. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein ~~said particles, in, in~~ said ~~first~~ second step, said second electrically insulating layer is comprised of electrically insulating material and particles, the particles are made of same material as said electrically insulating material which forms said electrically insulating layer.

56. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said electrically insulating layer is comprised of electrically insulating material and particles, said particles are diffused in the electrically insulating layer so that forming of the electrically insulating layer is controlled.

57. (Previously Presented) A method for producing a semiconductor device according to claim 53 ~~56~~,

wherein said particles have a diameter of less than 10 micrometers each.

58. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein said ~~first~~ second step further comprises a step of forming a protrusive portion in vicinity of a boundary between the inclined portion of said electrically insulating layer and a flat portion of said electrically insulating layer having an approximately uniform thickness, said protrusive portion ~~being disposed over a part~~ extending further away from a principal surface of said wafer than that of said flat portion.

59. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said second electrically insulating layer is formed with an inclined portion thereof at a gradient in a range of from 5% to 30% with respect to a principal surface of said ~~semiconductor device~~ wafer on which said circuit electrode is provided.

60. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said second electrically insulating layer is ~~formed by use of said electrically insulating material, and wherein~~ comprised of electrically insulating material characterized by a glass transition temperature of said

~~electrically insulating material that~~ is in a range of from 150°C to 400°C.

61. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said second electrically insulating layer is ~~formed by use of said electrically insulating material, and wherein~~ comprised of electrically insulating material characterized by a degradation temperature of said electrically insulating material that is in a range of from 300°C to 450°C.

62. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, [[a]] said second electrically insulating layer is mask printed above a principal plane of said wafer using a mask with an opening portion and a squeegee, said squeegee is moved over an opposite vertex along a diagonal direction of an ~~the~~ opening portion in said mask so that in the formation of said electrically insulating layer ~~is formed~~ by printing.

63. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said second electrically insulating layer is mask printed above a principal plane of said wafer using a mask with an opening portion and a squeegee, in which said mask and said wafer are aligned with each other, [[a]] said squeegee is moved on the mask to fill resin into an opening portion of a mask pattern and, thereafter, said mask is detached from said wafer so that said electrically insulating layer is formed.

64. (Currently Amended) A method for producing a semiconductor device according to claim 53,

wherein, in said ~~first~~ second step, said second electrically insulating layer is formed by printing by use of said mask having an opening portion smaller than a region covered by said second electrically insulating layer, the opening portion being filled with the component material of said second electrically insulating layer that becomes over spread after removal of said mask.

65. (Currently Amended) A method for producing a semiconductor device comprising the steps of:

forming a first electrically insulating layer ~~exposing at least a part of a circuit electrode of~~ on a wafer thereon containing a circuit electrode, said first electrically insulating layer covering a periphery portion of said circuit electrode;

forming a second electrically insulating layer, having a thickness in a range of from 35 to 150 micrometers and an inclined portion at the an edge thereof, by printing electrically insulating material including particles by use of a mask; and

forming a wiring on said second electrically insulating layer for electrical connection to said circuit electrode ~~of said wafer.~~

66. (Currently Amended) A method for producing a semiconductor device comprising:

a first step of forming ~~an~~ a first electrically insulating layer on a wafer ~~with a part of~~ containing a circuit electrode, ~~provided on said wafer, remaining exposed from said first electrically insulating layer~~ covering a periphery portion of said circuit electrode; ~~by printing an electrically insulating material by use of a mask, said electrically insulating layer having an inclined portion at an edge thereof and having~~

~~a thickness in a range of from 35 to 150 micrometers;~~

~~a second step of forming a wiring over an area from a circuit electrode of said wafer to said second electrically insulating layer having an inclined portion at an edge thereof and a flat portion ~~of~~ on said first electrically insulating layer; and layer, said second electrically insulating layer having a thickness in a range of from 35 to 150 micrometers.~~

~~wherein said second step includes a process by which said second electrically insulating layer is mask printed above a principal plane of said wafer using a mask with an opening portion and a squeegee, in which said squeegee is moved along a diagonal direction of the opening portion in said mask, filling the opening portion with component material used in the formation of said second electrically insulating layer;~~

~~a third step of forming a wiring over an area extending from said circuit electrode of said wafer to the inclined portion and the flat portion of said second electrically insulating layer; and~~

~~a ~~third~~ fourth step of forming an external connection terminal on said second electrically insulating layer, said external connection terminal being electrically connected with said circuit electrode through said wiring [[:]] .~~

~~wherein said printing includes a process comprising the step of moving a squeegee to the opposing vertex of an opening portion in said mask so that said electrically insulating layer is formed by printing said electrically insulating material.~~

67. (Currently Amended) A method for producing a semiconductor device comprising:

a first step of forming an a first electrically insulating layer on a wafer ~~with a part of containing a circuit electrode, provided on said wafer, remaining~~

~~exposed from said first electrically insulating layer covering a periphery portion of said circuit electrode; by printing an electrically insulating material by use of a mask, said electrically insulating layer having an inclined portion at an edge thereof and functioning to relax occurrence of stress between said semiconductor device and a circuit board on which the semiconductor device is to be mounted;~~

~~a second step of forming a wiring over an area from said circuit electrode of the wafer to said second electrically insulating layer having an inclined portion at an edge thereof and a flat portion of on said first electrically insulating layer; and layer,~~

~~wherein said second electrically insulating layer is mask printed above a principal of said wafer using a mask with an opening portion and a squeegee, in which said squeegee is moved from a corner to a diagonally opposite corner in the opening portion of the mask, filling the opening portion with component material used in the formation of said second electrically insulating layer, and~~

~~wherein said second electrically insulating layer has a function to relax occurrence of stress between said semiconductor device and a circuit board on which said semiconductor device is to be mounted,~~

~~a third step of forming a wiring over an area extending from a circuit electrode of said wafer to the inclined portion and the flat portion of said second electrically insulating layer; and~~

~~a third fourth step of forming an external connection terminal on said second electrically insulating layer, said external connection terminal being electrically connected with said circuit electrode through said wiring [,.].~~

~~wherein the step of printing comprises the step of moving the squeegee on a top side to the opposite vertex of the opening portion of the mask, and forming said electrically insulating layer by printing said electrically insulating material.~~